



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/761,896	01/17/2001	Jiaying Ma	56309USA4A.002	6203
32692	7590	02/02/2004	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY			CRUZ, MAGDA	
PO BOX 33427			ART UNIT	
ST. PAUL, MN 55133-3427			PAPER NUMBER	

2851

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/761,896

Applicant(s)

MA ET AL.

Examiner

Magda Cruz

Art Unit

2851

-- Th MAILING DATE of this communication appears on th cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-20 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5/29/2001. 6) ☒ Other: IDS filed on 9/4/2002.

DETAILED ACTION

Drawings

1. The drawings are objected to because Figures 6-10 failed to show the units in each axis of the graphs. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 4-8, 11, 13-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. in view of Ouderkirk et al.

Watanabe et al. (US Patent Number 6,172,814 B1) discloses a screen (10S) for managing light comprising: a substrate (11, 31); and a polymeric composition (26, 14) disposed on the substrate (11), the polymeric composition comprising adhesive material (column 13, lines 54-60); wherein the screen (10S) comprises a rear projection screen (Figure 7); further comprising a lenticular structure (column 4, lines 31); further including a Fresnel lens (27). A method of making an optical element such as a screen or display with preferential light scattering directions column 8, lines 27-34 and 54-62), the method comprising: forming a polymeric composition comprising a first polymeric material and a second polymeric material dispersed within the first polymeric material, wherein an index of reaction of the first polymeric material differs from an index of refraction of the second polymeric material (column 12, lines 39-51). An optical system (Figure 7) comprising: an illumination source (1) for providing light, a screen (10S) having a incident surface for receiving light from the illumination source and a viewing surface (column 8, lines 27-34).

Watanabe et al. teaches the salient features of the present invention, except dispersed phase material disposed as a plurality of elongated structures within the adhesive material, each elongated structure having a major axis, wherein the major axes of the elongated structures are substantially aligned and the dispersed phase material has an index of refraction that differs by at least 0.01 from an index of refraction of the adhesive material, wherein the adhesive composition provides the display with a

first viewing angle that is broader than the second viewing angle; further comprising a polarizer, dispensing the polymeric composition on a substrate. However, Watanabe et al. discloses a transparent ball disposing layer (14) having minute transparent balls (12).

Ouderkirk et al. (US Patent Number 5,825,543) discloses a dispersed phase material (12) disposed as a plurality of elongated structures (14) within the adhesive material (i.e. resin), each elongated structure having a major axis (Figure 1), wherein the major axes of the elongated structures are substantially aligned and the dispersed phase material (Figures 3d and 3e) has an index of refraction that differs by at least 0.01 from an index of refraction of the adhesive material (column 7, lines 12-19), wherein the adhesive composition provides the display with a first viewing angle that is broader than the second viewing angle (column 11, lines 61-66); further comprising a polarizer (column 4, line 32), dispensing the polymeric composition on a substrate (column 12, lines 50-57).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the dispersed phase material disclosed by Ouderkirk et al. in substitution of the transparent ball disposing layer from Watanabe et al.'s invention, for the purpose of controlling optical characteristics, such as reflectance and transmission (column 1, lines 8-9).

6. Claims 3, 9-10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. in view of Ouderkirk et al. as applied to claims 1-2, 4-8, 11, 13-18 and 20 above, and further in view of Harada et al.

Watanabe et al. (US Patent Number 6,172,814 B1) in combination with Ouderkirk et al. (US Patent Number 5,825,543) teaches the salient features of the present invention, except a front projection screen, further including a reflective element. However, Watanabe et al. discloses a screen (10S) for managing light.

Harada et al. (US Patent Number 6,381,068 B1) discloses a front projection screen (210), further including a reflective element (230).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the projection screen disclosed by Harada et al. in substitution of the screen from Watanabe et al.'s invention, for the purpose of providing a reflective front projection screen capable of projecting an image with enhanced contrast and a wide viewing angle in the presence of relatively high levels of ambient light, using a reflective polarizing element in combination with a diffusing element (column 2, lines 35-41).

Allowable Subject Matter

7. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach method of making an optical element such as a screen or display, comprising in combination with the additionally recited elements, a

polymeric composition on a substrate at a temperature wherein a shear viscosity of the second polymeric material is within the range of 0.5 to 2 times a shear viscosity of the first polymeric material.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gardner et al. (US Patent Number 6,590,711 B1) discloses a light directing construction for use in a display apparatus.

Abe et al. (US Patent Number 6,307,675 B1) teaches a rear projection screen having a double-side lens sheet and horizontal lenticular sheet.

Carlson et al. (US Patent Number 5,991,077) shows a multilayer polarizer having a continuous and disperse phase.

Allen et al. (US Patent Number 6,590,705 B1) teaches an optical film with co-continuous phases.

Stevenson et al. (US Patent Number 6,631,030 B2) discloses projection screens and methods for making such projection screens.

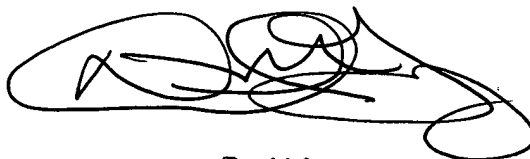
Allen et al. (US Patent Number 6,239,907 B1) shows a rear projection screen using birefringent optical film for asymmetric light scattering.

Wheatley et al. (US Patent Number 5,122,905) discloses a multilayer polymeric reflective body.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magda Cruz whose telephone number is (703)308-6367. The examiner can normally be reached on Monday through Thursday 8:00-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on (703)308-2847. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

A handwritten signature in black ink, appearing to read 'David Gray', with a large, stylized flourish extending to the right.

David Gray
Primary Examiner

Magda Cruz
Patent Examiner
January 24, 2004